Claims

No claims are currently being canceled or added. Claim 18 is being amended. All pending claims are reproduced below, including those that have not been amended.

1. (Original) A servo demodulation system for use with a disk having zone bit recorded servo wedges, comprising:

a first servo demodulator adapted to search for a servo address mark (SAM) pattern, within a servo wedge, at a first nominal frequency useful for searching for the SAM pattern if the servo wedge is within a first zone; and

a second servo demodulator adapted to search for the SAM pattern, within the same servo wedge, at a second nominal frequency useful for searching for the SAM pattern if the servo wedge is within the second zone.

2. (Original) The system of claim 1, wherein:

the first nominal frequency corresponds to the first zone; and

the second nominal frequency corresponds to the second zone, which is adjacent to the first zone.

3. (Original) The system of claim 1, further comprising:

a microprocessor adapted to determine which of the first and second zones a head is reading, based at least in part on which of the first and second demodulators detects the SAM pattern.

4. (Original) The system of claim 1, further comprising:

a microprocessor adapted to select one detection of the SAM pattern, if both the first servo demodulator and the second servo demodulator detect the SAM pattern in the same servo wedge.

5. (Original) The system of claim of claim 4, wherein the microprocessor is further adapted to determine which of the first and second zones a head is reading, based at least in part on which detection of the SAM pattern is selected.

6. (Original) The system of clam 4, wherein:

the first servo demodulator is further adapted to determine at least one actual servo demodulation value corresponding to a detection of the SAM pattern, if the first servo demodulator detects the SAM pattern in the servo wedge;

the second servo demodulator is further adapted to determine at least one actual servo demodulation value corresponding to a detection of the SAM pattern, if the second servo demodulator detects the SAM pattern in the servo wedge; and

the microprocessor is adapted to select one detection of the SAM pattern based at least in part on the actual servo demodulation values determined by the first and second servo demodulators, if both the first and second servo demodulators detect the SAM pattern in the same servo wedge.

7. (Original) A servo demodulation system for use with a disk having zone bit recorded servo wedges, comprising:

a first servo demodulator adapted to search for a servo address mark (SAM) pattern within a servo wedge, assuming the servo wedge is within a first zone, said first servo demodulator further adapted to determine at least one actual servo demodulation value corresponding to a detection of the SAM pattern;

a second servo demodulator adapted to search for a SAM pattern within the same servo wedge, assuming the servo wedge is within a second zone that is adjacent to the first zone, said second servo demodulator further adapted to determine at least one actual servo demodulation value corresponding to a detection of the SAM pattern; and

a microprocessor adapted to characterize each detection of the SAM pattern as a good SAM detection or a bad SAM detection based at least in part on at least one actual servo demodulation value corresponding to the detection.

8. (Original) The system of claim 7, wherein:

the first servo demodulator is adapted to operate at a first nominal frequency useful for searching for the SAM pattern if the servo wedge is within the first zone; and

the second servo demodulator is adapted to operate at a second nominal frequency useful for searching for the SAM pattern if the servo wedge is within the second zone.

9. (Original) The system of claim 7, wherein the microprocessor is further adapted to determine which of the first and second zones a head is reading, based at least in part on which of the first and second servo demodulators performs a good SAM detection.

10. (Original) The system of claim 7, wherein the microprocessor is further adapted to select one detection of the SAM pattern as a best good SAM detection, if both the first servo demodulator and the second servo demodulator perform a good SAM detection in the same servo wedge.

11. (Original) The system of claim 10, wherein the microprocessor is further adapted to determine which of the first and second zones a head is reading, based at least in part on which detection of the SAM pattern is selected as the best good SAM detection.

12. (Original) The system of claim 7, wherein at least one actual servo demodulation value corresponding to the good SAM detection is used for servo control.

13. (Original) The system of claim 7, wherein the servo demodulator that performs a good SAM detection searches for the SAM pattern in a next servo wedge, based at least in part on when or where the SAM pattern, corresponding to the good SAM detection, was detected.

14. (Original) The system of claim 7, wherein, if only one of the first and second servo demodulators performs a good SAM detection, then both the first and second servo demodulators search for the SAM pattern in a next servo wedge, based at least in part on when or where the SAM pattern, corresponding to the good SAM detection, was detected by the one servo demodulator.

15. (Original) The system of claim 7, wherein the microprocessor is adapted to select a best good SAM detection, if both the first and second servo demodulators perform a good SAM detection, and wherein at least one actual servo demodulation value corresponding to the best good SAM detection is used for servo control.

16. (Original) The system of claim 7, wherein the first and second servo demodulators search for the SAM pattern in a next servo wedge based at least in part on when or where the SAM pattern was detected in a previous servo wedge, if no detection of the SAM pattern in a servo wedge is characterized as a good SAM detection.

17. (Original) The system of claim 7, wherein, if only one good SAM detection occurs for a servo wedge, then the first and second servo demodulators search for the SAM pattern in a next servo wedge based at least in part on when or where the SAM pattern, corresponding to the only good SAM detection, was detected.

18. (Currently Amended) A disk drive system, comprising:

a head disk assembly including:

a disk having zone bit recorded servo wedges and data fields;

a head to produce a signal representative of information stored in the zone bit recorded servo wedges and data fields;

a spindle motor to rotate the disk; and

a voice coil motor to position the head over the disk;

a first servo demodulator adapted to search for a servo address mark (SAM) pattern within a zone bit recorded servo wedge, at a first nominal frequency useful for searching for the SAM pattern if the servo wedge is within a first zone;

a second servo demodulator adapted to search for the SAM pattern, within the same servo wedge, at a second nominal frequency useful for searching for the SAM pattern if the servo ~~sedge~~ wedge is within the second zone; and

a microprocessor adapted to determine which of the first and second zones the head is reading, based at least in part on which of the first and second demodulators detects the SAM pattern.

19. (Original) The system of claim 18, wherein the first and second servo demodulators search for the SAM pattern in the portions of the signal corresponding to the servo wedges.

20. (Original) The system of claim 18, wherein the microprocessor is further adapted to select one detection of the SAM pattern, if both the first servo demodulator and the second servo demodulator detect the SAM pattern in the same servo wedge, and to determine which of the first and second zones the at least one head is reading, based at least in part on which detection of the SAM pattern is selected.

21. (Original) A servo demodulation system, comprising:

a plurality of servo demodulators adapted to search for a servo address mark (SAM) pattern within a servo wedge;

wherein each of the servo demodulators uses a different nominal frequency to search for the SAM pattern within the servo wedge.

22. (Original) The system of claim 21, wherein the servo wedge is zone bit recorded.

23. (Original) The system of claim 21, wherein the plurality of servo demodulators comprise two servo demodulators.

24. (Original) The system of claim 21, wherein the plurality of servo demodulators comprise more than two servo demodulators.

25. (Original) The system of claim 21, further comprising:

a microprocessor adapted to select one detection of the SAM pattern, if more than one of the plurality of servo demodulators detects the SAM pattern.

26. (Original) The system of claim 21, further comprising:

a microprocessor adapted to determine which zone a head is reading based at least in part on outputs from the servo demodulators.